

# ***Why Space Exploration Will Save Humanity***

It is our only Choice.



Smoke billows from stacks as a Chinese woman wears a mask while walking in a neighborhood next to a coal-fired power plant in Shanxi, China, on November 26, 2015. Humanity's consumption of earth's natural resources has more than tripled in 40 years. [Related Article](#)

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## Why Space Exploration Will Save Humanity

It is no secret that the earth faces a bevy of crises. Whether it is rapid climate change, the impending threat of nuclear war, widespread pollution, world hunger, or the hundreds of ongoing conflicts still going on today, to some extent, everyone knows these complications exist. However, awareness does not guarantee action.<sup>1</sup> We have noticed these problems for decades, yet little to nothing has been done to resolve them.

Take climate change as an example. The earth is dying, and it is happening quicker than you might think. Modern industrial society, as we constructed it in the last 200 years, is inherently destructive to the planet. Year after year, the worldwide economy grows, the standard of living improves, and the population increases, which means we need to emit, consume, and destroy more. True sustainability is unattainable: we have to emit or die. This is the systemic reality of global emissions; we will have emissions as long as we need energy.

According to a UN report, we will soon have to feed 10 billion people by 2050, and no one can do that without throwing billions of tons of CO<sub>2</sub> into the atmosphere and consuming extensive quantities of resources.<sup>2</sup> Additionally, these people will require homes, clothing, and other necessities and will demand luxury products which compound the issue. Our devouring of earth's natural resources has more than tripled in the past 40 years, and the emission of greenhouse gasses is steadily increasing, trends that will likely continue for the foreseeable future.<sup>3</sup> Our limited technology does not allow us to do otherwise. Society runs on fossil fuels.

If the status quo is maintained, by 2100, sea levels will rise one to eight feet, the global temperature will climb by five degrees celsius, a significant fraction of the polar ice caps will melt, and there will be many more floods, hurricanes, and droughts.<sup>4</sup> By 2500, extensive parts of the world will be uninhabitable for humans.<sup>5</sup> There is also the rising chance that a runaway greenhouse gas effect will render the entire planet barren.<sup>6</sup> Then, there is the natural resource

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<sup>1</sup> Cray Ronan, "Why We Can't Stop Climate Change," (Medium, 2021), <https://ronancray.medium.com/why-we-cant-stop-climate-change-cb16a0d4ffb3>.

<sup>2</sup> "World Population Prospects 2019," *Department of Economic and Social Affairs* (United Nations, 2019), <https://population.un.org/wpp/Graphs/Probabilistic/POP/TOT/900>.

<sup>3</sup> Mosbergen Dominique, "In 40 Years, Human Consumption of Earth's Natural Resources Has More than Tripled," *Environment* (HuffPost, 2016), [https://www.huffpost.com/entry/natural-resource-use-tripled\\_n\\_57a05c3ae4b0693164c273a8](https://www.huffpost.com/entry/natural-resource-use-tripled_n_57a05c3ae4b0693164c273a8).

<sup>4</sup> "The Effects of Climate Change," *Climate Change: Vital Signs of the Planet* (NASA, 2022), <https://climate.nasa.gov/effects/>.

<sup>5</sup> Cardenas Shirley, "How Climate Change Could Make Some Areas of Earth Uninhabitable by 2500," (World Economic Forum, 2021), <https://www.weforum.org/agenda/2021/10/climate-change-could-make-some-areas-of-earth-uninhabitable-by-2500/>.

<sup>6</sup> "How Likely Is a Runaway Greenhouse Effect on Earth?" *n.d. MIT Technology Review*. (Emerging Technology, 2012), <https://www.technologyreview.com/2012/01/13/256801/how-likely-is-a-runaway-greenhouse-effect-on-earth/>.

aspect. If our current natural resource consumption continues to grow, there will only be enough coal to meet global demands for 188 years, enough oil for 46.2 years, and enough natural gas for 58.6 years.<sup>7</sup> The depletion of other resources on earth will follow shortly after.

Could we stop in time? Unfortunately, it is unlikely we will be able to save the earth unless we take an all-encompassing systemic approach, nothing less than changing the fundamentals of our modern industrial societies. Efficient, eco-friendly technology and innovation alone will not develop in time to stop emissions: action is crucial. The more you optimize for efficiency, the harder and costlier it becomes to get efficient, which means that the return on investment of these technologies will decrease over time. Eco-friendly technology is also expensive, and currently, no one is offering enough incentives or funding, hindering their development. Besides, enormous fundamental change is needed, and there is no simple solution. For instance, getting an electric car is nice, but if the power it requires to run comes from a coal-fired power plant and the asphalt it drives on still creates and exudes a lot of emissions, then how is the environment better off?<sup>8</sup> Attempting to solve one problem leads to a thousand more.

The politics surrounding climate change ensures that politicians will not earnestly pursue environmentalism unless forced to for fear of disgruntling their voters. Environmentalism will necessitate cutbacks of some sort for humanity and since growth has become the dominant mantra of the world's economies, cutting back is not a popular idea. Many simply play the blame game and condemn other countries for pollution because that is simpler than facing the issue and creating the organization and international cooperation that is so desperately required.<sup>9</sup>

Not only do we have to worry about our reckless pollution endangering ourselves and the biosphere, but also the looming threat of nuclear genocide. Earth, geopolitically speaking, is an unstable mess crammed with 13,150 nuclear weapons.<sup>10</sup> Sixty-four countries, along with 576 militias and separatist groups, are currently engaged in violent conflicts, and international politics are as tense as they have been since the Cold War.<sup>11</sup> The new political pressure reflects various countries' nuclear behavior; an increased number of nukes are being assigned to operational forces. The Russia-Ukraine crisis is a recent example of the rising tensions between superpowers with enough nukes to destroy humanity hundreds of times over and the delicate balance of mutually assured destruction. Hellman, a Stanford professor and co-inventor of public-key cryptography, predicts that there is a 0.3% chance that humanity will blow up in a

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<sup>7</sup> "The needs of 7 billion people..." *Depletion of Natural Resources* (The World Counts, 2014), <https://www.theworldcounts.com/stories/Depletion-of-Natural-Resources>.

<sup>8</sup> Thompson Dennis, "Hot Asphalt Causes a Lot of Air Pollution," *MedicineNet Health News* (MedicineNet, 2020), <https://www.medicinenet.com/script/main/art.asp?articlekey=246042>.

<sup>9</sup> Turekian Vaughan and Paul J. Saunders, "Why Climate Change Can't Be Stopped," *Uncategorized* (Foreign Policy, 2007), <https://foreignpolicy.com/2007/09/25/why-climate-change-cant-be-stopped/>.

<sup>10</sup> "Status of World Nuclear Forces," (Federation of American Scientists, 2022), <https://fas.org/issues/nuclear-weapons/status-world-nuclear-forces/>.

<sup>11</sup> Staff Writer, "How Many Wars Are Going on in the World Right Now?" *World View* (Reference.com., 2020), <https://www.reference.com/world-view/many-wars-going-world-right-now-ffd6236450ccb7ae>.

blaze of nuclear fury every year.<sup>12</sup> Other weapons of mass destruction, including chemical and biological agents, likely raise the probability of human extinction. In the near future, as resource depletion sets in since the earth's resources are finite and the areas of habitable land shrink, nations will undoubtedly fight over the scraps, leading to an unwelcome increase in the likelihood that everyone dies.

This sad turn of events leaves humanity only one choice, to reach out to other worlds or die. Steven Hawking, a famous proponent of this idea, stated that "[o]ne way or another, I regard it as almost inevitable that either a nuclear confrontation or environmental catastrophe will cripple the Earth at some point in the next 1,000 years," that humanity's "reckless indifference" to the plight of our planet will be the doom of us all, and that "[s]preading out may be the only thing that saves us from ourselves."<sup>13</sup> Continuing to exist as a one-planet species is like putting all of our eggs in one basket and then setting a time bomb underneath it. There are too many ways humanity can destroy itself in a fragile, unstable world.<sup>14</sup>

Space exploration will not only guarantee humanity's survival on other worlds but could also solve earth's problems through technological advancements and the acquirement of new resources from extraterrestrial bodies. During the space race, NASA developed many technologies that massively benefit us, such as water purifiers, improved smoke detectors, satellites and all of its technological derivatives, memory foam, better tires, freeze-dried food, and more.<sup>15</sup> There is an invaluable amount of rare resources such as gold, silver, platinum, and other valuable substances present in many celestial bodies. Space exploration will also answer many questions we have about the universe, provide thousands of jobs, and reinvigorate a new generation of humans to inspire them to become explorers.<sup>16</sup> This latest round of exploration will bring humanity into a golden era where we make the leap from a planetary species to an inter-planetary one, a time where we can prosper as a spacefaring civilization and learn from the mistakes on earth. While this dream of space exploration can save us, we need to start now; we will be unable to establish self-sustaining colonies in space for at least fifty years. Every year we waste decreases our chances of survival as the earth deteriorates.

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<sup>12</sup> Silver Stephen, "Nuclear War: What Are the Chances of an Atomic Holocaust in 2021?" *Nuclear War* (The National Interest, 2021), <https://nationalinterest.org/blog/buzz/nuclear-war-what-are-chances-atomic-holocaust-2021-180592>.

<sup>13</sup> Kotecki Peter, "Stephen Hawking: Humans Need to Leave Earth or Risk Being Annihilated by Nuclear War or Climate Change," *Science* (Business Insider, 2018), <https://www.businessinsider.com/stephen-hawking-humans-leave-earth-or-be-annihilated-2018-10?op=1>.

<sup>14</sup> Zebrowski George, "Why We Need To Be Prepared To Leave Planet Earth," *The Blog* (HuffPost, 2014), [https://www.huffpost.com/entry/spacefaring-world\\_b\\_5638290](https://www.huffpost.com/entry/spacefaring-world_b_5638290)

<sup>15</sup> Kolbe Kerry, "10 Tech Developments to Thank the Space Race For," *Hidden Figures* (The Telegraph, 2017), <https://www.telegraph.co.uk/films/hidden-figures/technology-from-the-space-race/>.

<sup>16</sup> The Cosmic Companion, "Here Are 10 Reasons Why Space Exploration Benefits Earth," *Tech* (TNW, 2022), <https://thenextweb.com/news/10-ways-space-exploration-benefits-earth-syndication>.

So what can you do, dear listener? How could you boost our chances of survival within reason? For starters, you can inform yourself of the danger we put ourselves and the planet in. While knowledge does not always lead to a reaction, it does raise the likelihood of it happening. When you are old enough to vote, elect politicians that respect science and support space exploration and progressive policies instead of those that deny climate change exists, accept “donations” from large corporations, and waste our time with petty squabbles over political power. Invest in new, efficient technologies while they are still expensive or invest in space exploration to drive prices down; companies and space agencies will innovate if there is a clearly growing demand or interest for more eco-friendly products and space travel. Finally, consider taking action. You can do this in many different ways, such as lobbying for more funds for scientific agencies or stricter emission standards on corporations or making sustainable life choices and encouraging others to do so. This is the best we can do. It will buy us enough time to colonize a new planet and hopefully save the earth. Besides, why should we contend ourselves with sitting on one planet when there is so much more to discover about the beautifully strange universe we exist in?